What is claimed is:

1. An improved lateral flow assay reading device, the reading device being configured to detect an assay result from a lateral flow assay membrane strip, the assay result being revealed by the binding of a detectable analyte within a detection zone along the membrane strip, comprising:

(a) a housing having an exterior and an interior;

(b) a receiving port within the housing for admitting a membrane strip directly from the exterior of the housing to the interior of the reader housing, the receiving port providing a light barrier structure;

(c) a reading mechanism comprising:

(i) a source of electromagnetic radiation;

(ii) one or more sensors capable of detecting the intensity of the electromagnetic radiation, wherein the source of electromagnetic radiation and the sensors are positioned within the reading mechanism such that when the membrane strip is admitted into the receiving port, and enclosed by the light barrier structure, the electromagnetic radiation impacts the detection zone upon the membrane strip prior to impacting the sensor.

2. The reading device of claim 1 in which the receiving port comprises a pressure plate that bears against the membrane strip.

3. The reading device of claim 2 in which the pressure plate is spring loaded.

4. The reading device of claim 1 in which a light absorbing member is provided within the receiving port to absorb stray light.

5. The reading device of claim 4 in which the light absorbing member comprises an absorption pad located adjacent the membrane strip in the receiving port.

6. The reading device of claim 1 in which the electromagnetic radiation proceeds through an aperture prior to entering the receiving port.

7. The reading device of claim 6 in which the aperture is elongated.

8. The reading device of claim 6 in which the aperture is circular.

9. The reading device of claim 6 in which the aperture is sized to an area which is no more than about 1.8 times the area of the detection zone upon the membrane strip.

10. The reading device of claim 1 in which the receiving port includes a first stop position for a reference reading and a second stop position for a sample reading.

11. The reading device of claim 6 in which the aperture is sized to an area that is no more than about 1.3 times the area of a respective zone upon the membrane strip.

12. A test kit comprising the lateral flow assay reading device of claim 1, together with an assay device comprising a porous liquid permeable membrane strip, wherein the thickness of the porous liquid

permeable membrane strip is transmissible by electromagnetic radiation, in which the assay result is revealed by specific binding of a detectable analyte directly or indirectly to a binding agent immobilized in said detection zone.

13. The test kit of claim 12, in which the reading mechanism determines the assay result in part by measuring with the sensors the electromagnetic radiation reflected from:

a) the detection zone of the membrane strip, and

b) a calibration zone on the membrane strip,

wherein a comparison is made between the values measured in (a) and in (b).

14. A system for conducting a lateral flow assay to detect the quantity of analyte residing in a test liquid, the system comprising:

(a) a probe-analyte conjugate capable of generating a detectable signal;

(b) a membrane strip, the membrane strip comprising a detection zone, the detection zone having deposited thereon a first capture reagent, wherein the first capture reagent is configured for attaching to probe-analyte conjugates to immobilize said probe-analyte conjugates to form a sandwich complex within the detection zone; and

(c) a reading device, the reading device being configured to detect an assay result from the membrane strip, the reader device including a housing having an exterior and an interior and a receiving

port within the housing for admitting the membrane directly from the exterior of the reader housing to the interior of the reader housing, the receiving port being configured with a light barrier structure for minimizing the introduction of stray light into the reader, wherein the source of electromagnetic radiation and the sensors are positioned within the reading mechanism such that when the membrane strip is admitted into the receiving port, the electromagnetic radiation impacts the detection zone upon the membrane strip prior to impacting the sensor.

15. The system of claim 14 in which the receiving port comprises a pressure plate that bears against the membrane strip.

16. The system of claim 15 in which the pressure plate is spring loaded.

17. The system of claim 14 in which a light absorbing member is provided within the receiving port to absorb stray light.

18. The system of claim 17 in which the light-absorbing member comprises a felt material that is flexible and conformable.

19. The system of claim 14 in which the electromagnetic radiation proceeds through an aperture prior to entering the receiving port.

20. The system of claim 19 in which the aperture is elongated.

21. The system of claim 19 in which the aperture is circular.

22. The system of claim 19 in which the aperture is sized to an area which is no more than about 1.8 times the area of the detection zone upon the membrane strip.

23. The system of claim 19 in which the aperture is sized to an area which is no more than about 1.3 times the area of the detection zone upon the membrane strip.

24. The system of claim 19 in which the aperture is sized to an area that is about the same as the detection zone upon the membrane strip.

25. A method of conducting a lateral flow assay to detect the quantity of analyte residing in a test liquid, the method comprising:

(a) providing probe-conjugates upon a membrane strip, the probe-conjugates being configured for generating a detectable signal,

(b) providing an analyte on the membrane strip,

(c) attaching the probe-conjugate to the analyte to form a probe-analyte conjugate complex;

(d) wherein the membrane strip is configured for mobilizing a test liquid containing probes and probe-analyte conjugate complexes, the membrane strip comprising a detection zone,

(e) providing in the detection zone a first capture reagent, wherein the first capture reagent is immobilized and is configured for attaching to the probe-analyte conjugate complexes to immobilize said probe-analyte

conjugate complexes by forming a sandwich complex within the detection zone;

(f) providing a reading device, the reading device being configured to detect an assay result from the membrane strip, the reading device including a housing having an exterior and an interior and a receiving port with a light barrier structure, the receiving port being fitted within the housing for admitting the membrane directly from the exterior of the reader housing to the interior of the reader housing;

(g) blocking ambient light from reaching the membrane detection zone, thereby increasing sensitivity;

(h) wherein the source of electromagnetic radiation and the sensors are positioned such that when the membrane strip is admitted into the receiving port, electromagnetic radiation impacts the detection zone upon the membrane strip, and then travels to the sensor.